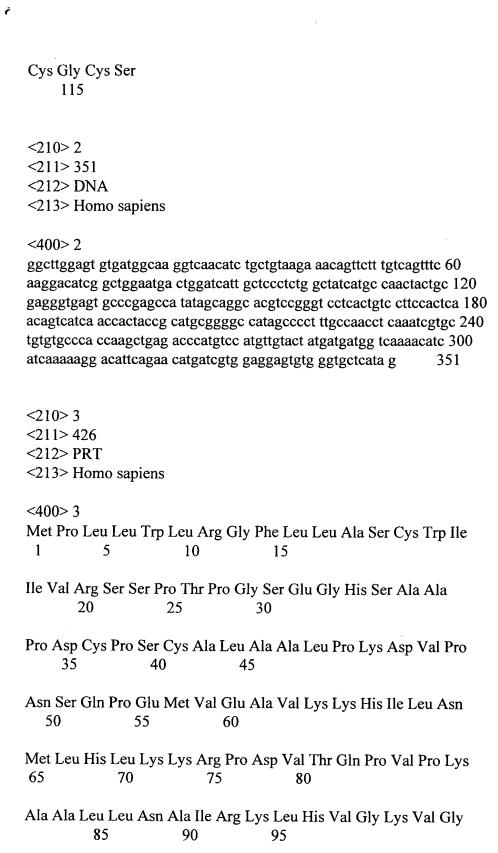
SEQUENCE LISTING

- <110> REGENTS OF THE UNIVERSITY OF CALIFORNIA
- <120> COMPOSITIONS AND METHODS FOR GROWTH OF EMBRYONIC STEM CELLS
- <130> UCSD-104-PCT
- <140> PCT/US05/007704
- <141> 2005-03-09
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r i

Glu Cys Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His Ser Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe Ala Asn Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser Met Leu Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln Asn Met Ile Val Glu Glu Cys Gly Cys Ser <210>4 <211> 130 <212> PRT <213> Homo sapiens <400>4 Ala Arg Gln Ser Glu Asp His Pro His Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile Cys Cys Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp Asn Asp Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Glu Cys Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His Ser Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe Ala Asn Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser Met Leu Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln Asn Met Ile Val Glu Glu Cys Gly

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L	o	v

270

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Met Leu I 65	His Leu L 70		g Pro As 5	p Val Tł 80	ır Gln Pro	Val Pro Ly	S
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Glu Asn (10		al Glu Ile 105		Asp Ile 10	Gly Arg A	Arg Ala Glu	
Met Asn (115		let Glu Gl 120	n Thr Se 125	er Glu Ile	e Ile Thr P	he Ala Glu	
Ser Gly T 130	hr Ala Ar 13		Leu His 140	Phe Glu	ı Ile Ser L	ys Glu Gly	
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Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Glu 340 345 350
Cys Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe His 355 360 365
Ser Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe Ala 370 375 380
Asn Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser Met 385 390 395 400
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Ser Asp 145		· Val Val 50	Glu Arg 155	Ala Glu	Ile Trp Leu 160	Phe Leu Lys
Val Pro	Lys Ala 165		Thr Arg 70	Thr Lys		Arg Leu Phe
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Glu Asp 195	Val Gly	Phe Pro 200		Lys Sei 205	Glu Val Le	u Ile Ser Glu
Lys Val	Val Asp	Ala Arg 215	Lys Ser 220		His Ile Phe	Pro Val Ser
Ser Ser I 225	le Gln A		eu Asp (235	Gln Gly	Lys Ser Ala 240	Leu Asp Ile
Arg Thr	Ala Cys 245		Cys His 50	Glu Th		r Leu Val Leu
Leu Gly 2	Lys Lys 60	Lys Lys 265	Lys Glu	Glu Glu 270	ı Ala Glu Gl	y Arg Lys Arg
Asp Gly 275	Glu Gly		Val Asp		ı Lys Glu G	In Ser His Arg
Pro Phe I 290		Leu Gln 295	Ala Arg		Glu Glu Hi	s Pro His Arg
Arg Arg . 305	Arg Arg 31		Glu Cys 315	s Asp Gl	y Lys Val A 320	sn Ile Cys Cys
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Gln Ala Asn Val Trp Ile Phe Leu Arg Leu Pro Lys Gly Asn Arg Thr Arg Ala Asn Val Asn Ile Arg Leu Leu Leu Gln Gln Gly Ala Gly Glu Lys Ile Leu Ala Glu Lys Ser Val Asp Thr Arg Arg Ser Gly Trp His Thr Phe Pro Ala Ser Glu Ser Val Gln Ser Leu Leu Gln Arg Gly Gly Ser Thr Leu Ser Leu Arg Val Ser Cys Pro Leu Cys Ala Asp Ala Arg Ala Thr Pro Val Leu Val Ser Pro Gly Gly Ser Glu Arg Glu Gln Ser His Arg Pro Phe Leu Met Ala Val Val Arg Gln Met Asp Glu Leu Ser Leu Arg Arg Arg Lys Arg Gly Leu Glu Cys Asp Gly Lys Ala Arg Val Cys Cys Lys Arg Gln Phe Tyr Val Asn Phe Lys Asp Ile Gly Trp Asn Asp Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Asp Cys Ala Ser Asn Val Ala Ser Ile Thr Gly Asn Ser Leu Ser Phe His Ser Thr Val Ile Ser His Tyr Arg Ile Arg Gly Tyr Ser Pro Phe Thr Asn Ile Lys Ser Cys Cys Val Pro Thr Arg Leu Arg Ala Met Ser Met Leu Tyr Tyr Asn Glu Glu Gln Lys Ile Val Lys Lys Asp Ile Gln Asn Met Ile Val Glu Glu Cys Gly Cys Ser

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       20
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Asp Gly Glu Pro Asp Asp Pro Val Thr Pro Cys Pro Ser Cys Ala Leu
                  40
                              45
Ala Gln Arg Gln Lys Asp Ser Glu Glu Gln Thr Asp Met Val Glu Ala
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Val Lys Arg His Ile Leu Asn Met Leu His Leu Asn Thr Arg Pro Asn
             70
                          75
                                       80
65
Val Thr His Pro Val Pro Arg Ala Ala Leu Leu Asn Ala Ile Arg Arg
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                      90
                                   95
Leu His Val Gly Arg Val Gly Glu Asp Gly Thr Val Glu Met Glu Glu
                    105
                                  110
       100
Asp Gly Gly Gly Leu Gly Glu His Arg Glu Gln Ser Glu Glu Gln Pro
                               125
                  120
     115
Phe Glu Ile Ile Thr Phe Ala Glu Pro Gly Asp Ala Pro Asp Ile Met
                             140
   130
                135
Lys Phe Asp Ile Ser Met Glu Gly Asn Thr Leu Ser Val Val Glu Gln
145
              150
                           155
                                        160
Ala Asn Val Trp Leu Leu Leu Lys Val Ala Lys Gly Ser Arg Gly Lys
                       170
                                    175
          165
 Gly Lys Val Ser Val Gln Leu Leu Gln His Gly Lys Ala Asp Pro Gly
                                  190
       180
                     185
 Ser Ala Asp Gly Pro Gln Glu Ala Val Val Ser Glu Lys Thr Val Asp
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Thr Arg Arg Ser Gly Trp His Thr Leu Pro Val Ser Arg Thr Val Gln Thr Leu Leu Asp Gly Asp Ser Ser Met Leu Ser Leu Arg Val Ser Cys Pro Met Cys Ala Glu Ala Gly Ala Val Pro Ile Leu Val Pro Thr Glu Ser Asn Lys Gly Lys Glu Arg Glu Gln Ser His Arg Pro Phe Leu Met Val Val Leu Lys Pro Ala Glu Glu His Pro His Arg Arg Ser Lys Arg Gly Leu Glu Cys Asp Gly Lys Ile Arg Val Cys Cys Lys Arg Gln Phe Tyr Val Asn Phe Lys Asp Ile Gly Trp Ser Asp Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly Asp Cys Pro Ser His Val Ala Ser Ile Thr Gly Ser Ala Leu Ser Phe His Ser Thr Val Ile Asn His Tyr Arg Met Arg Gly Tyr Ser Pro Phe Asn Asn Ile Lys Ser Cys Cys Val Pro Thr Arg Leu Arg Ala Met Ser Met Leu Tyr Tyr Asn Glu Glu Gln Lys Ile Ile Lys Lys Asp Ile Gln Asn Met Ile Val Glu Glu

<210> 17

Cys Gly Cys Ser

<211> 164

<212> PRT

<213> Homo sapiens

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 Asp Ile Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg
                  40
Ile Asp Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Asn
                55
Tyr Asn Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile
                          75
Lys Gly Val Glu Ser Glu Phe Tyr Leu Ala Met Asn Lys Glu Gly Lys
                       90
                                   95
Leu Tyr Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu
                    105
                                  110
Ile Leu Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His
                  120
                               125
Asn Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Ile Pro Val
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                             140
Arg Gly Lys Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro
145
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                          155
                                        160
Met Ala Ile Thr
<210>18
<211> 194
<212> PRT
<213> Homo sapiens
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Ser Cys Phe His Ile Ile Cys Leu Val Gly Thr Ile Ser Leu Ala Cys
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<400> 17

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Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile 50 55 60

Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg Ile Asp 65 70 75 80

Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Asn Tyr Asn 85 90 95

Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly 100 105 110

Val Glu Ser Glu Phe Tyr Leu Ala Met Asn Lys Glu Gly Lys Leu Tyr 115 120 125

Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu 130 135 140

Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His Asn Gly 145 150 155 160

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<211> 194

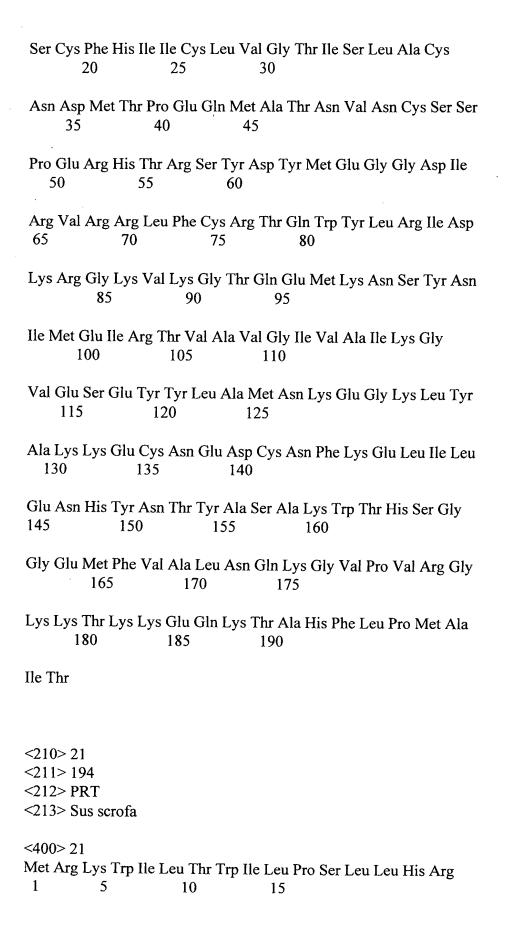
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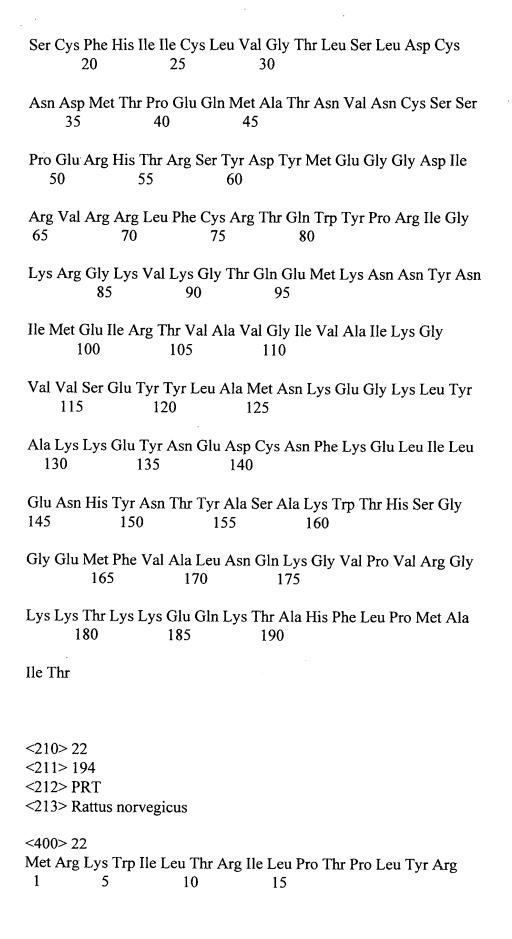
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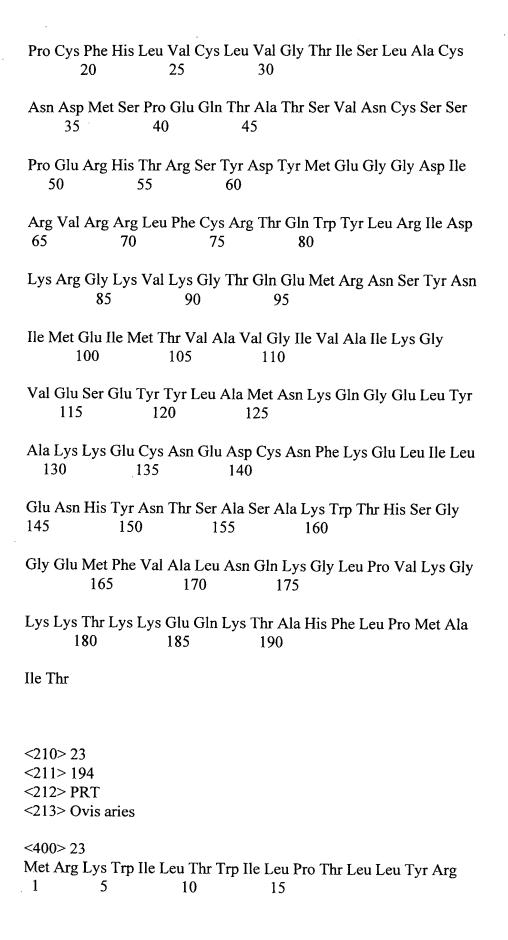
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Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile 50 55 60
Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg Ile Asp 65 70 75 80
Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Ser Tyr Asn 85 90 95
Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly 100 105 110
Val Glu Ser Glu Tyr Tyr Leu Ala Met Asn Lys Glu Gly Lys Leu Tyr 115 120 125
Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu 130 135 140
Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His Ser Gly 145 150 155 160
Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Ile Pro Val Lys Gly 165 170 175
Lys Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro Met Ala 180 185 190
Ile Thr
<210> 20
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<212> PRT
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<400> 20
Met Arg Lys Trp Ile Leu Thr Trp Ile Leu Pro Thr Leu Leu Tyr Arg
1 5 10 15









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Asn Asp Met Thr Pro Glu Gln Met Ala Thr Asn Val Asn Cys Ser Ser 35 40 45

Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile 50 55 60

Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg Ile Asp 65 70 75 80

Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Ser Tyr Asn 85 90 95

Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly
100 105 110

Val Glu Ser Glu Tyr Tyr Leu Ala Met Asn Lys Glu Gly Lys Leu Tyr 115 120 125

Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu 130 135 140

Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His Ser Gly 145 150 155 160

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<210> 25

<211>1200

<212> DNA

<213> Homo sapiens

<400> 25

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<210> 26 <211> 585 <212> DNA <213> Mus musculus

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<210> 27 <211> 686 <212> DNA <213> Canis familiaris

<400> 27

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tacaagaagt tatgattaca tggaaggagg ggatataaga gtgagaagac tettetgteg 300 aacacagtgg tatetgagga ttgataaacg aggcaaagte aaagggacce aagagatgaa 360 gaacagttac aatatcatgg aaatcaggac agtggcagtt ggaatagtgg caatcaaagg 420 ggtggaaagt gaatattate ttgcaatgaa taaggaagga aagetetatg caaagaaaga 480 atgcaatgaa gattgcaact tcaaagaatt aattetggaa aaccattaca acacatatge 540 atcagetaaa tggacacaca geggaggaga aatgtttgtt getttaaatc aaaagggggt 600 teetgtaagg gggaaaaaaa egaagaaaga acaaaaaaca geecacttte tteetatgge 660 aataacataa tcatatatgg tatata 686

<210> 28 <211> 690 <212> DNA <213> Sus scrofa

<400> 28

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<210> 29 <211> 693 <212> DNA <213> Rattus norvegicus

<400> 29

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gaaaaccatt acaacacctc tgcatcagct aaatggacac acagcggagg ggaaatgttc 600 gtggccttaa atcaaaaggg gcttcctgtc aaagggaaga aaacgaagaa agaacaaaaa 660 acggcccact ttcttcctat ggcaataact taa 693

<210> 30 <211> 622

<212> DNA

<213> Ovis aries

<400> 30

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<210>31

<211> 558

<212> DNA

<213> Mustela vison

<400> 31

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<210> 32

<211> 1633

<212> DNA

<213> Homo sapiens

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<210> 34

<211> 348

<212> DNA

<213> Homo sapiens

<400> 34

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<210>35

<211> 1840

<212> DNA

<213> Homo sapiens

<400> 35

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<223> Description of Artificial Sequence: Synthetic
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<211> 19
<212> DNA
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<223> Description of Artificial Sequence: Synthetic
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primer
<400>38
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                                            19
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primer

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